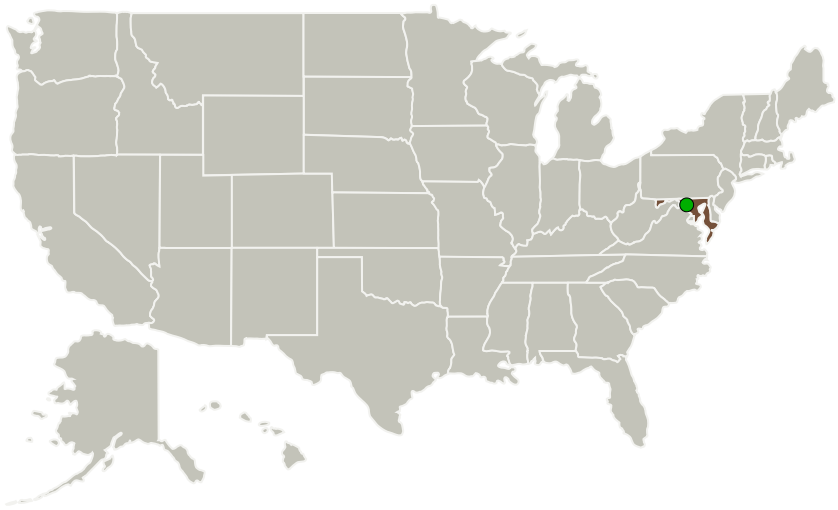
Towards Efficient Scientific Data Management using Cloud Storage, Phase I

Completed Technology Project (2010 - 2010)

Project Introduction

Building more in-house datacenters to backup explosively growing scientific datasets is neither cost-effective nor in line with government green initiative. Cloud computing is emerging as a viable platform for data storage, collaboration and disaster recovery. We are going to develop a suite of "backup-to-cloud" tools that allows user to backup scientific datasets and applications into the cloud, and use cloud storage as a distribution platform. Our tool is optimized under technical and economical constraints posed by common cloud storage. We use both public and private cloud platforms to conduct feasibility study from performance, security, scalability and cost perspectives.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Open Research, Inc.	Lead Organization	Industry Minority-Owned Business, Women-Owned Small Business (WOSB)	Bethesda, Maryland
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

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Primary U.S. Work Locations
Maryland

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139529)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Open Research, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

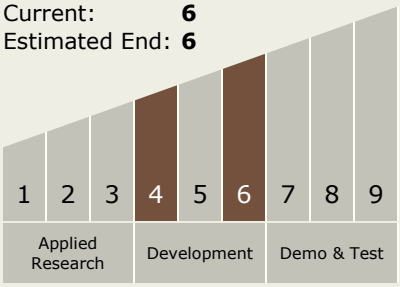
Carlos Torrez

Principal Investigator:

Qiming He

Technology Maturity (TRL)

Start: **4**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.6 Ground Computing
    - TX11.6.8 Cloud Computing

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System